

Listing of the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (currently amended): An isolated protein complex having a first protein ~~which is interacting with a second protein~~, said first protein being selected from the group consisting of:

- (a) Tsg101,
- (b) a Tsg101 fragment capable of interacting with HIV GAGp6 late domain,
[[and]]
- (c) a homologue of Tsg101 capable of interacting with HIV GAGp6 late domain and having an amino acid sequence that is at least about 50% identical to Tsg101, [[or]]
and
- (d) a homologue of said Tsg101 fragment [[,]]capable of interacting with HIV GAGp6 late domain and having an amino acid sequence that is at least about 50% identical to that of Tsg101 or said Tsg101 fragment;

and said ~~interacting with a second protein which is being~~ selected from the group consisting of:

- (i) HIV GAG ~~polypeptide~~,
- (ii) ~~a HIV GAG polypeptide~~ an HIV GAG fragment containing an HIV GAGp6 late domain motif and capable of interacting with Tsg101, [[and]]
- (iii) a homologue of HIV GAG ~~polypeptide~~ that is capable of interacting with Tsg101, has an amino acid sequence that is at least about 50% identical to that of HIV GAG and contains an HIV GAGp6 late domain motif, [[or]] and
- (iv) a homologue of said HIV GAG ~~polypeptide~~ fragment [[,]] that is capable of interacting with Tsg101, has ~~having~~ an amino acid sequence that is at least about 50% identical to that of HIV GAG ~~polypeptide~~ or said HIV GAG ~~polypeptide~~ fragment, and contains an HIV GAGp6 late domain motif.

Claim 2 (currently amended): The isolated protein complex of Claim 1, wherein said second protein is HIV GAGp6 or a fragment thereof that contains an HIV GAGp6 late domain and is capable of interacting with Tsg101.

Claim 3 (currently amended): The isolated protein complex of Claim 1, wherein said first protein is a fusion protein containing (a) Tsg101 or (b) said Tsg101 fragment or (c) said homologue of Tsg101 or (d) said homologue of said Tsg101 fragment.

Claim 4 (currently amended): The isolated protein complex of Claim 1, wherein said second protein is a fusion protein containing (a) HIV GAG polypeptide or (b) said HIV GAG polypeptide fragment or (c) said homologue of HIV GAG polypeptide or (d) said homologue of said HIV GAG polypeptide fragment.

Claim 5 (currently amended): An isolated protein complex having a first protein which is Tsg101 or a Tsg101 fragment capable of interacting with HIV GAGp6 late domain, or a homologue thereof capable of interacting with HIV GAGp6 late domain and having an amino acid sequence that is at least 50% identical to that of Tsg101 or said Tsg101 fragment, interacting with a second protein which is HIV GAGp6 polypeptide or ~~a HIV GAGp6 fragment~~ an HIV GAGp6 fragment containing an HIV GAGp6 late domain and capable of interacting with Tsg101, or a homologue thereof that contains an HIV GAGp6 late domain motif, is capable of interacting with Tsg101 and has ~~having~~ an amino acid sequence that is at least 50% identical to that of HIV GAGp6 polypeptide or said HIV GAGp6 polypeptide fragment.

Claim 6 (currently amended): The isolated protein complex of Claim 5, wherein said first protein is a fusion protein containing (a) Tsg101 or (b) said Tsg101 fragment or (c) said homologue of Tsg101 or said Tsg101 fragment.

Claim 7 (currently amended): The isolated protein complex of Claim 5, wherein said second protein is a fusion protein containing (a) HIV GAGp6 polypeptide or (b) said HIV GAGp6 fragment or (c) said homologue of HIV GAGp6 or said HIV GAGp6 fragment.

Claim 8 (currently amended): An isolated protein complex comprising:

- (a) a first protein which is selected from the group consisting of
 - (i) Tsg101 protein,
 - (ii) a Tsg101 protein homologue having an amino acid sequence at least 90% identical to that of Tsg101 and capable of interacting with HIV GAGp6 late domain,
 - (iii) a Tsg101 protein fragment containing the Tsg101 UEV domain and capable of interacting with HIV GAGp6 late domain, and
 - (iv) a fusion protein containing said Tsg101 protein, said Tsg101 protein homologue or said Tsg101 protein fragment; and
- (b) a second protein selected from the group consisting of
 - (1) HIV GAG ~~polypeptide~~,
 - (2) ~~a HIV GAG~~ an HIV GAG polypeptide fragment containing an HIV GAGp6 late domain motif and capable of interacting with Tsg101,
 - (3) ~~a HIV GAG~~ an HIV GAG polypeptide homologue having an amino acid sequence at least 90% identical to that of HIV GAG ~~polypeptide~~ and capable of interacting with Tsg101,
 - (4) HIV GAGp6 ~~protein~~,
 - (5) ~~a HIV GAGp6~~ an HIV GAGp6 homologue having an amino acid sequence at least 90% identical to that of HIV GAGp6 ~~polypeptide~~ and capable of interacting with Tsg101,
 - (6) ~~a HIV GAGp6~~ an HIV GAGp6 fragment containing an HIV GAGp6 late domain motif and capable of interacting with Tsg101, and
 - (7) a fusion protein containing said HIV GAG ~~polypeptide~~, said HIV GAG ~~polypeptide~~ fragment, said HIV GAG ~~polypeptide~~ homologue, said HIV GAGp6 ~~protein~~, said HIV GAGp6 homologue or said HIV GAGp6 fragment[.];

wherein said first and second proteins interact to form said isolated protein complex.

Claim 9 (original): The isolated protein complex of Claim 8, wherein said HIV GAGp6 fragment contains an amino acid sequence of SEQ ID NO:25 or SEQ ID NO:26.

Claim 10 (original): The isolated protein complex of Claim 8, wherein said HIV GAGp6 fragment contains an amino acid sequence of SEQ ID NO:31 or SEQ ID NO:32.

Claim 11 (original): The isolated protein complex of Claim 8, wherein said HIV GAGp6 fragment has a contiguous span of at least 10 amino acid residues of a naturally occurring HIV GAGp6, said contiguous span containing a P(T/S)AP late domain motif.

Claim 12 (currently amended): An isolated protein complex ~~comprising~~ comprising:

a first protein which is Tsg101 or a Tsg101 ~~fragment~~ fragment, or a homologue thereof having an amino acid sequence that is at least 50% identical to that of Tsg101 or said Tsg101 fragment, wherein said Tsg101 fragment and said homologue are capable of interacting with HIV Gagp6 late domain; and

~~interacting with~~ a second protein which is a retrovirus GAG polypeptide or a retrovirus GAG polypeptide fragment containing the P(T/S)AP late domain ~~motif~~ motif, or a homologue thereof containing the P(T/S)AP late domain motif and having an amino acid sequence that is at least 50% identical to that of said retrovirus GAG polypeptide or said retrovirus GAG polypeptide fragment, wherein said first and second proteins interact to form said isolated protein complex.

Claim 13 (original): The isolated protein complex of Claim 12, wherein said retrovirus is a lentivirus.

Claim 14 (original): The isolated protein complex of Claim 13, wherein said lentivirus is a primate lentivirus.

Claim 15 (original): The isolated protein complex of Claim 14, wherein said primate lentivirus is selected from the group consisting of HIV-1, HIV-2, HIV-3, and simian immunodeficiency viruses.

Claim 16 (original): The isolated protein complex of Claim 13, wherein said lentivirus is a non-primate lentivirus selected from the group consisting of bovine lentiviruses, feline lentiviruses, and ovine/caprine lentiviruses.

Claim 17 (currently amended): An isolated protein complex comprising:

- (a) a first protein which is selected from the group consisting of
 - (i) Tsg101 ~~protein~~,
 - (ii) a Tsg101 ~~protein~~ homologue having an amino acid sequence at least 90% identical to that of Tsg101 and capable of interacting with HIV GAGp6 late domain,
 - (iii) a Tsg101 ~~protein~~ fragment containing the Tsg101 UEV domain and capable of interacting with HIV GAGp6 late domain, and
 - (iv) a fusion protein containing said Tsg101 ~~protein~~, said Tsg101 ~~protein~~ homologue or said Tsg101 ~~protein~~ fragment; and
- (b) a second protein which is selected from the group consisting of
 - (1) a retrovirus GAG ~~polypeptide~~ having the P(T/S)AP late domain motif,
 - (2) a homologue of said retrovirus GAG ~~polypeptide~~, said homologue having an amino acid sequence at least 90% identical to that of said retrovirus GAG ~~polypeptide~~ and capable of interacting with Tsg101,
 - (3) a fragment of said retrovirus GAG ~~polypeptide~~, said fragment containing an HIV GAGp6 late domain motif and being capable of interacting with Tsg101, and
 - (4) a fusion protein containing said retrovirus GAG ~~polypeptide~~, said retrovirus GAG ~~polypeptide~~ homologue or said retrovirus GAG ~~polypeptide~~ fragment[.];

wherein said first and second proteins interact to form said isolated protein complex.

Claim 18 (original): The isolated protein complex of Claim 17, wherein said retrovirus is a lentivirus.

Claim 19 (original): The isolated protein complex of Claim 18, wherein said lentivirus is a primate lentivirus.

Claim 20 (original): The isolated protein complex of Claim 19, wherein said primate lentivirus is selected from the group consisting of HIV-1, HIV-2, HIV-3, and simian immunodeficiency viruses.

Claim 21 (currently amended): The isolated protein complex of ~~Claim 19~~ Claim 18, wherein said lentivirus is a non-primate lentivirus selected from the group consisting of bovine lentiviruses, feline lentiviruses, and ovine/caprine lentiviruses.

Claim 22 (currently amended): An isolated protein complex comprising:

- (a) a first protein which is selected from the group consisting of
 - (i) Tsg101 ~~protein~~,
 - (ii) a Tsg101 ~~protein~~ homologue having an amino acid sequence at least 90% identical to that of Tsg101 and capable of interacting with HIV GAGp6 late domain,
 - (iii) a Tsg101 ~~protein~~ fragment containing the Tsg101 UEV domain and capable of interacting with an HIV GAGp6 late domain, and
 - (iv) a fusion protein containing said Tsg101 ~~protein~~, said Tsg101 ~~protein~~ homologue or said Tsg101 ~~protein~~ fragment; and
- (b) a second protein which is selected from the group consisting of
 - (1) a primate lentivirus GAG polypeptide,
 - (2) a primate lentivirus GAG ~~polypeptide~~ homologue having an amino acid sequence at least 90% identical to that of said primate lentivirus GAG ~~polypeptide~~ and capable of interacting with Tsg101,
 - (3) a primate lentivirus GAGp6 protein,
 - (4) a primate lentivirus GAGp6 homologue having an amino acid sequence at least 90% identical to that of HIV GAGp6 ~~polypeptide~~ and capable of interacting with Tsg101,
 - (5) a primate lentivirus GAGp6 fragment containing an HIV GAGp6 late domain motif and capable of interacting with Tsg101, and

(6) a fusion protein containing said primate lentivirus GAG polypeptide, said primate lentivirus GAG polypeptide homologue, said primate lentivirus GAGp6 protein, said primate lentivirus GAGp6 homologue or said primate lentivirus GAGp6 fragment[.];

wherein said first and second proteins interact to form said isolated protein complex.

Claim 23 (currently amended): An isolated protein complex comprising:

a first fusion protein having a Tsg101 protein fragment capable of interacting with HIV GAGp6 late domain interacting with a second fusion protein containing a fragment of HIV GAG containing an HIV GAGp6 late domain motif polypeptide.

Claim 24 (withdrawn): A method for making the protein complex of Claim 1, comprising the steps of:

providing said first protein and said second protein; and
contacting said first protein with said second protein.

Claim 25 (withdrawn): A protein microarray comprising the protein complex according to Claim 1.

Claim 26 (currently amended): ~~A protein~~ An isolated protein complex having a first polypeptide covalently linked to a second polypeptide, wherein said first polypeptide is Tsg101 or a homologue or fragment thereof capable of interacting with HIV GAG p6 late domain, and wherein said second polypeptide is HIV GAG or a homologue or fragment thereof[.] containing an HIV GAGp6 late domain; and

wherein said first and second polypeptides interact to form said isolated protein complex.

Claim 27 (withdrawn): An isolated nucleic acid encoding the fusion protein of Claim 26.

Claim 28 (withdrawn): A method for selecting modulators of a protein complex according to Claim 8, comprising:

- providing the protein complex;
- contacting said protein complex with a test compound; and
- determining the presence or absence of binding of said test compound to said protein complex.

Claim 29 (withdrawn): A method for selecting modulators of an interaction between a first protein and a second protein,

- (a) said first protein being selected from group consisting of
 - (i) Tsg101 protein,
 - (ii) a Tsg101 protein homologue having an amino acid sequence at least 90% identical to that of Tsg101 and capable of interacting with HIV GAGp6,
 - (iii) a Tsg101 protein fragment containing the Tsg101 UEV domain, and
 - (iv) a fusion protein containing said Tsg101 protein, said Tsg101 protein homologue or said Tsg101 protein fragment; and
- (b) said second protein being selected from the group consisting of
 - (1) HIV GAG polypeptide,
 - (2) a HIV GAG polypeptide homologue having an amino acid sequence at least 90% identical to that of HIV GAG polypeptide and capable of interacting with Tsg101,
 - (3) HIV GAGp6 protein,
 - (4) a HIV GAGp6 homologue having an amino acid sequence at least 90% identical to that of HIV GAGp6 polypeptide and capable of interacting with Tsg101,
 - (5) a HIV GAGp6 fragment capable of interacting with Tsg101, and
 - (6) a fusion protein containing said HIV GAG polypeptide, said HIV GAG polypeptide homologue, said HIV GAGp6 protein, said HIV GAGp6 homologue or said HIV GAGp6 fragment, said method comprising:
 - contacting said first protein with said second protein in the presence of one or more test compounds; and
 - determining the interaction between said first protein and said second protein.

Claim 30 (withdrawn): The method of Claim 29, wherein at least one of said first and second proteins is a fusion protein having a detectable tag.

Claim 31 (withdrawn): The method of Claim 29, wherein said contacting step is conducted in a substantially cell free environment.

Claim 32 (withdrawn): The method of Claim 29, wherein said contacting step is conducted in a host cell.

Claim 33 (withdrawn): The method of Claim 32, wherein said host cell is a yeast cell.

Claim 34 (withdrawn): A method for selecting modulators of an interaction between a first protein and a second protein,

- (a) said first protein being selected from group consisting of
 - (i) Tsg101 protein,
 - (ii) a Tsg101 protein homologue having an amino acid sequence at least 90% identical to that of Tsg101 and capable of interacting with HIV GAGp6,
 - (iii) a Tsg101 protein fragment containing the Tsg101 UEV domain, and
 - (iv) a fusion protein containing said Tsg101 protein, said Tsg101 protein homologue or said Tsg101 protein fragment; and
 - (b) said second protein being selected from the group consisting of
 - (1) a retrovirus GAG polypeptide having the P(T/S)AP late domain motif,
 - (2) a homologue of said retrovirus GAG polypeptide, said homologue having an amino acid sequence at least 90% identical to that of said retrovirus GAG polypeptide and capable of interacting with Tsg101,
 - (3) a fragment of said retrovirus GAG polypeptide, said fragment being capable of interacting with Tsg101, and
 - (4) a fusion protein containing said retrovirus GAG polypeptide, said retrovirus GAG polypeptide homologue or said retrovirus GAG polypeptide fragment,
- said method comprising:

contacting said first protein with said second protein in the presence of one or more test compounds; and

determining the interaction between said first protein and said second protein.

Claim 35 (withdrawn): The method of Claim 34, wherein said contacting step is conducted in a substantially cell free environment.

Claim 36 (withdrawn): The method of Claim 34, wherein said contacting step is conducted in a host cell.

Claim 37 (withdrawn): A method for selecting modulators of the protein complex of Claim 8, comprising:

contacting said protein complex with a test compound; and

determining the interaction between said first protein and said second protein.

Claim 38 (withdrawn): A method for selecting modulators of the protein complex of Claim 17, comprising:

contacting said protein complex with a test compound; and

determining the interaction between said first protein and said second protein.

Claim 39 (withdrawn): A method for selecting modulators of the protein complex of Claim 22, comprising:

contacting said protein complex with a test compound; and

determining the interaction between said first protein and said second protein.

Claim 40 (withdrawn): A method for selecting modulators of an interaction between a first polypeptide and a second polypeptide,

(a) said first polypeptide being selected from group consisting of

(i) Tsg101 protein,

(ii) a Tsg101 protein homologue having an amino acid sequence at least 90% identical to that of Tsg101 and capable of interacting with HIV GAGp6 late domain, and

(iii) a Tsg101 protein fragment containing the Tsg101 UEV domain; and

(b) said second polypeptide being selected from the group consisting of

(1) HIV GAG polypeptide,

(2) a HIV GAG polypeptide homologue having an amino acid sequence at least 90% identical to that of HIV GAG polypeptide and capable of interacting with Tsg101,

(3) HIV GAGp6 protein,

(4) a HIV GAGp6 homologue having an amino acid sequence at least 90% identical to that of HIV GAGp6 polypeptide and capable of interacting with Tsg101, and

(5) a HIV GAGp6 fragment capable of interacting with Tsg101, said method comprising:

providing in a host cell a first fusion protein having said first polypeptide, and a second fusion protein having said second polypeptide, wherein a DNA binding domain is fused to one of said first and second polypeptides while a transcription-activating domain is fused to the other of said first and second polypeptides;

providing in said host cell a reporter gene, wherein the transcription of the reporter gene is determined by the interaction between the first polypeptide and the second polypeptide;

allowing said first and second fusion proteins to interact with each other within said host cell in the presence of a test compound; and

determining the presence or absence of expression of said reporter gene.

Claim 41 (withdrawn): The method of Claim 40, wherein said host cell is a yeast cell.

Claim 42 (withdrawn): A method for selecting modulators of the protein complex of Claim 17, comprising:

providing in a host cell a first fusion protein containing said first protein, and a second fusion protein containing said second protein, wherein a DNA binding domain is

fused to one of said first and second polypeptides while a transcription-activating domain is fused to the other of said first and second proteins;

providing in said host cell a reporter gene, wherein the transcription of the reporter gene is determined by the interaction between the first protein and the second protein;

allowing said first and second fusion proteins to interact with each other within said host cell in the presence of a test compound; and

determining the presence or absence of expression of said reporter gene.

Claim 43 (withdrawn): A method for selecting modulators of the protein complex of Claim 22, comprising:

providing in a host cell a first fusion protein containing said first protein, and a second fusion protein containing said second protein, wherein a DNA binding domain is fused to one of said first and second polypeptides while a transcription-activating domain is fused to the other of said first and second proteins;

providing in said host cell a reporter gene, wherein the transcription of the reporter gene is determined by the interaction between the first protein and the second protein;

allowing said first and second fusion proteins to interact with each other within said host cell in the presence of a test compound; and

determining the presence or absence of expression of said reporter gene.

Claim 44 (currently amended): A composition comprising:

(a) a first expression vector having a nucleic acid encoding a first protein which is selected from the group consisting of

(i) Tsg101 ~~protein~~,

(ii) a Tsg101 ~~protein~~ homologue having an amino acid sequence at least [[90%]] 50% identical to that of Tsg101 and capable of interacting with HIV GAGp6 late domain,

(iii) a Tsg101 ~~protein~~ fragment containing the Tsg101 UEV domain and capable of interacting with HIV GAGp6 late domain, [[and]]

(iv) a homologue of said Tsg101 fragment having an amino acid sequence at least 50% identical to that of said Tsg101 fragment, and capable of interacting with HIV GAGp6 late domain, and

(v) a fusion protein containing said Tsg101 ~~protein~~, said Tsg101 ~~protein~~ homologue or said Tsg101 ~~protein~~ fragment, or said homologue of said Tsg101 fragment;
and

(b) a second expression vector having a nucleic acid encoding a second protein selected from the group consisting of

(1) HIV GAG ~~polypeptide~~,

(2) ~~a HIV GAG polypeptide~~ an HIV GAG homologue having an amino acid sequence at least ~~[[90%]]~~ 50% identical to that of HIV GAG ~~polypeptide~~ and capable of interacting with Tsg101,

(3) HIV GAGp6 ~~protein~~,

(4) ~~a HIV GAGp6~~ an HIV GAGp6 homologue having an amino acid sequence at least ~~[[90%]]~~ 50% identical to that of HIV GAGp6 ~~polypeptide~~ and capable of interacting with Tsg101,

(5) ~~a HIV GAGp6~~ an HIV GAGp6 fragment containing an HIV GAGp6 late domain motif and capable of interacting with Tsg101, ~~[[and]]~~

(6) a homologue of said HIV GAGp6 fragment having an amino acid sequence at least 50% identical to that of HIV GAGp6 fragment, containing an HIV GAGp6 late domain motif and capable of interacting with Tsg101, and

(7) a fusion protein containing said HIV GAG ~~polypeptide~~, said HIV GAG ~~polypeptide~~ homologue, said HIV GAGp6 ~~protein~~, said HIV GAGp6 homologue or said HIV GAGp6 fragment[[.]], or said homologue of said HIV GAGp6 fragment;

wherein said first and second proteins are capable of interacting to form a protein complex.

Claim 45 (currently amended): A host cell comprising:

(a) a first expression vector having a nucleic acid encoding a first protein which is selected from the group consisting of

(i) Tsg101 ~~protein~~,

(ii) a Tsg101 ~~protein~~ homologue having an amino acid sequence at least 90% identical to that of Tsg101 and capable of interacting with HIV GAGp6 late domain,

(iii) a Tsg101 ~~protein~~ fragment containing the Tsg101 UEV domain and capable of interacting with HIV GAGp6 late domain, [[and]]

(iv) a homologue of said Tsg101 fragment having an amino acid sequence at least 50% identical to that of said Tsg101 fragment, and capable of interacting with HIV GAGp6 late domain, and

(v) a fusion protein containing said Tsg101 ~~protein~~, said Tsg101 ~~protein~~ homologue or said Tsg101 ~~protein~~ fragment, or said homologue of said Tsg101 fragment; and

(b) a second expression vector having a nucleic acid encoding a second protein selected from the group consisting of

(1) HIV GAG ~~polypeptide~~,

(2) ~~a HIV GAG polypeptide~~ an HIV GAG homologue having an amino acid sequence at least 90% identical to that of HIV GAG ~~polypeptide~~ and capable of interacting with Tsg101,

(3) HIV GAGp6 ~~protein~~,

(4) ~~a HIV GAGp6~~ an HIV GAGp6 homologue having an amino acid sequence at least 90% identical to that of HIV GAGp6 ~~polypeptide~~ and capable of interacting with Tsg101,

(5) ~~a HIV GAGp6~~ an HIV GAGp6 fragment containing an HIV GAGp6 late domain motif capable of interacting with Tsg101, [[and]]

(6) a homologue of said HIV GAGp6 fragment having an amino acid sequence at least 50% identical to that of HIV GAGp6 fragment, containing an HIV GAGp6 late domain motif and capable of interacting with Tsg101, and

(7) a fusion protein containing said HIV GAG ~~polypeptide~~, said HIV GAG ~~polypeptide~~ homologue, said HIV GAGp6 ~~protein~~, said HIV GAGp6 homologue or said HIV GAGp6 fragment[[.]], or said homologue of said HIV GAGp6 fragment;

wherein said first and second proteins are capable of interacting to form a protein complex.

Claim 46 (original): The host cell of Claim 45, wherein said host cell is a yeast cell.

Claim 47 (original): The host cell of Claim 45, wherein said first and second proteins are expressed in fusion proteins.

Claim 48 (original): The host cell of Claim 45, wherein one of said first and second nucleic acids is linked to a nucleic acid encoding a DNA binding domain, and the other of said first and second nucleic acids is linked to a nucleic acid encoding a transcription-activation domain, whereby two fusion proteins can be produced in said host cell.

Claim 49 (original): The host cell of Claim 45, further comprising a reporter gene, wherein the expression of the reporter gene is determined by the interaction between the first protein and the second protein.

Claim 50 (currently amended): A host cell comprising:

(a) a first expression vector having a nucleic acid encoding a first protein which is selected from the group consisting of

- (i) Tsg101 ~~protein~~,
- (ii) a Tsg101 ~~protein~~ homologue having an amino acid sequence at least 90% identical to that of Tsg101 and capable of interacting with HIV GAGp6 late domain,
- (iii) a Tsg101 ~~protein~~ fragment containing the Tsg101 UEV domain and capable of interacting with HIV GAGp6 late domain, and
- (iv) a fusion protein containing said Tsg101 ~~protein~~, said Tsg101 ~~protein~~ homologue or said Tsg101 ~~protein~~ fragment; and

(b) a second expression vector having a nucleic acid encoding a second protein selected from the group consisting of

- (1) a retrovirus GAG ~~polypeptide~~ having the P(T/S)AP late domain motif and capable of interacting with Tsg101,
- (2) a homologue of said retrovirus GAG ~~polypeptide~~, said homologue having an amino acid sequence at least 90% identical to that of said retrovirus GAG ~~polypeptide~~ and capable of interacting with Tsg101,

(3) a fragment of said retrovirus GAG ~~polypeptide~~, said fragment containing an HIV GAGp6 late domain motif and being capable of interacting with Tsg101, and

(4) a fusion protein containing said retrovirus GAG ~~polypeptide~~, said retrovirus GAG ~~polypeptide~~ homologue or said retrovirus GAG ~~polypeptide~~ fragment[[]];

wherein said first and second proteins interact to form a protein complex.

Claim 51 (withdrawn): A method for providing a compound capable of interfering with an interaction between the first and second proteins in the protein complex of Claim 8 comprising:

providing atomic coordinates defining a three-dimensional structure of said protein complex; and

designing or selecting compounds capable of interfering with the interaction between said first protein and said second protein based on said atomic coordinates.

Claim 52 (withdrawn): A method for providing a compound capable of interfering with an interaction between the first and second proteins in the protein complex of Claim 17 comprising:

providing atomic coordinates defining a three-dimensional structure of said protein complex; and

designing or selecting compounds capable of interfering with the interaction between said first protein and said second protein based on said atomic coordinates.

Claim 53 (withdrawn): A method for providing a compound capable of interfering with an interaction between the first and second proteins in the protein complex of Claim 22 comprising:

providing atomic coordinates defining a three-dimensional structure of said protein complex; and

designing or selecting compounds capable of interfering with the interaction between said first protein and said second protein based on said atomic coordinates.

Claim 54 (withdrawn): A method for selecting a compound capable of inhibiting a protein-protein interaction between Tsg101 and HIV GAGp6, comprising:

contacting a test compound with a protein selected from group consisting of

- (i) Tsg101 protein,
- (ii) a Tsg101 protein homologue having an amino acid sequence at least 90% identical to that of Tsg101 and capable of interacting with HIV GAGp6,
- (iii) a Tsg101 protein fragment containing the Tsg101 UEV domain, and
- (iv) a fusion protein containing said Tsg101 protein, said Tsg101 protein homologue or said Tsg101 protein fragment; and

determining whether said test compound is capable of binding said protein.

Claim 55 (withdrawn): The method of Claim 54, further comprising testing a test compound capable of binding said protein for its ability to interfere with a protein-protein interaction between Tsg101 and HIV GAGp6.

Claim 56 (withdrawn): The method of Claim 55, further comprising testing a test compound capable of binding said protein for its ability to inhibit HIV viral budding from an HIV-infected host cell.

Claim 57 (withdrawn): A method for selecting a compound capable of inhibiting a protein-protein interaction between Tsg101 and HIV GAGp6, comprising:

providing atomic coordinates defining a three-dimensional structure of a protein selected from group consisting of

- (i) Tsg101 protein,
- (ii) a Tsg101 protein homologue having an amino acid sequence at least 90% identical to that of Tsg101 and capable of interacting with HIV GAGp6,
- (iii) a Tsg101 protein fragment containing the Tsg101 UEV domain, and
- (iv) a fusion protein containing said Tsg101 protein, said Tsg101 protein homologue or said Tsg101 protein fragment; and

designing or selecting compounds capable of interacting with said protein based on said atomic coordinates.

Claim 58 (withdrawn): The method of Claim 57, further comprising testing a compound capable of interacting with said protein for its ability to interfere with a protein-protein interaction between Tsg101 and HIV GAGp6.

Claim 59 (withdrawn): The method of Claim 57, further comprising testing a test compound capable of interacting with said protein for its ability to inhibit HIV viral budding from an HIV-infected host cell.

Claim 60 (withdrawn): An isolated antibody selectively immunoreactive with a protein complex comprising Tsg101 and HIV GAGp6.

Claim 61 (currently amended): An expression vector comprising:

- (a) a first nucleic acid encoding a first protein which is selected from the group consisting of
 - (i) Tsg101,
 - (ii) a Tsg101 fragment containing the Tsg101 UEV domain and capable of interacting with HIV GAGp6 late domain,
 - (iii) a homologue of Tsg101 or said Tsg101 fragment, having an amino acid sequence at least 50% identical to that of Tsg101 or said fragment and capable of interacting with HIV GAGp6 late domain, and
 - (iv) a fusion protein containing Tsg101, ~~said Tsg101~~, said Tsg101 fragment, or said homologue of Tsg101 or said Tsg101 fragment; and
- (b) a second nucleic acid encoding a second protein selected from the group consisting of
 - (1) HIV GAG ~~polypeptide~~,
 - (2) ~~a HIV GAG polypeptide~~ an HIV GAG fragment containing an HIV GAGp6 late domain motif and capable of interacting with Tsg101,

(3) a homologue of HIV GAG polypeptide or said HIV GAG polypeptide fragment, containing an HIV GAGp6 late domain motif and having an amino acid sequence at least 50% identical to HIV GAG polypeptide or said HIV GAG polypeptide fragment and capable of interacting with Tsg101,

(4) HIV GAGp6 polypeptide,

(5) ~~a HIV GAGp6 polypeptide~~ an HIV GAGp6 fragment containing an HIV GAGp6 late domain motif and capable of interacting with Tsg101,

(6) a homologue of HIV GAGp6 polypeptide or said HIV GAGp6 polypeptide fragment, having an amino acid sequence at least 50% identical to that of HIV GAGp6 polypeptide or said HIV GAGp6 polypeptide fragment and capable of interacting with Tsg101, and

(7) a fusion protein containing said HIV GAG polypeptide, said HIV GAG polypeptide fragment, said ~~HIV GAG polypeptide-homologue of HIV GAG or said HIV GAG fragment~~, said HIV GAGp6 protein, said HIV GAGp6 polypeptide fragment, or said ~~HIV GAGp6 polypeptide-homologue of HIV GAGp6 or said HIV GAGp6 fragment~~ [[]];

wherein said first and second proteins are capable of interacting to form a protein complex.

Claim 62 (previously presented): A host cell comprising the expression vector of Claim 61.

Claim 63 (currently amended): A non-human host cell expressing:

(a) a first protein which is selected from the group consisting of

[[[(i)]] (i) Tsg101,

(ii) a Tsg101 fragment containing the Tsg101 UEV domain and capable of interacting with HIV GAGp6 late domain,

(iii) a homologue of Tsg101 or said Tsg101 fragment, having an amino acid sequence at least 50% identical to that of Tsg101 or said fragment and capable of interacting with HIV GAGp6 late domain, and

(iv) a fusion protein containing Tsg101, ~~said Tsg101~~, said Tsg101 fragment, or said homologue of Tsg101 or said Tsg101 fragment; and

(b) ~~a second nucleic acid encoding~~ a second protein selected from the group consisting of

(1) HIV GAG polypeptide,

(2) ~~a HIV GAG polypeptide~~ an HIV GAG fragment containing an HIV GAGp6 late domain motif and capable of interacting with Tsg101,

(3) a homologue of HIV GAG polypeptide or said HIV GAG polypeptide fragment, containing an HIV GAGp6 late domain motif, having an amino acid sequence at least 50% identical to HIV GAG polypeptide or said HIV GAG polypeptide fragment and capable of interacting with Tsg101,

(4) HIV GAGp6 polypeptide,

(5) ~~a HIV GAGp6 polypeptide~~ an HIV GAGp6 fragment containing an HIV GAGp6 late domain motif and capable of interacting with Tsg101,

(6) a homologue of HIV GAGp6 polypeptide or said HIV GAGp6 polypeptide fragment containing an HIV GAGp6 late domain motif, having an amino acid sequence at least 50% identical to that of HIV GAGp6 polypeptide or said HIV GAGp6 polypeptide fragment and capable of interacting with Tsg101, and

(7) a fusion protein containing said HIV GAG polypeptide, said HIV GAG polypeptide fragment, said ~~HIV GAG polypeptide~~ homologue of HIV GAG or said HIV GAG fragment, said HIV GAGp6 protein, said HIV GAGp6 polypeptide fragment, or said ~~HIV GAGp6 polypeptide~~ homologue of HIV GAGp6 or said HIV GAGp6 fragment [[.]];

wherein said first and second proteins are capable of interacting to form a protein complex within said non-human host cell.

Claim 64 (currently amended): An isolated human host cell comprising:

(a) a first promoter operably linked to a first chimeric nucleic acid encoding a first protein selected from the group consisting of

[[((i))] (i) Tsg101,

(ii) a Tsg101 fragment containing the Tsg101 UEV domain and capable of interacting with HIV GAGp6 late domain,

(iii) a homologue of Tsg101 or said Tsg101 fragment, having an amino acid sequence at least 50% identical to that of Tsg101 or said fragment and capable of interacting with HIV GAGp6 late domain, and

(iv) a fusion protein containing Tsg101, ~~said Tsg101~~, said Tsg101 fragment, or said homologue of Tsg101 or said Tsg101 fragment; and

(b) a second promoter operably linked to a second chimeric nucleic acid encoding a second protein selected from the group consisting of

(1) HIV GAG ~~polypeptide~~,

(2) ~~a HIV GAG polypeptide~~ an HIV GAG fragment capable of interacting with Tsg101,

(3) a homologue of HIV GAG ~~polypeptide~~ or said HIV GAG ~~polypeptide~~ fragment, containing an HIV GAGp6 late domain motif, having an amino acid sequence at least 50% identical to HIV GAG ~~polypeptide~~ or said HIV GAG ~~polypeptide~~ fragment and capable of interacting with Tsg101,

(4) HIV GAGp6 ~~polypeptide~~,

(5) ~~a HIV GAGp6 polypeptide~~ an HIV GAGp6 fragment containing an HIV GAGp6 late domain motif and capable of interacting with Tsg101,

(6) a homologue of HIV GAGp6 ~~polypeptide~~ or said HIV GAGp6 ~~polypeptide~~ fragment, containing an HIV GAGp6 late domain motif, having an amino acid sequence at least 50% identical to that of HIV GAGp6 ~~polypeptide~~ or said HIV GAGp6 ~~polypeptide~~ fragment and capable of interacting with Tsg101, and

(7) a fusion protein containing said HIV GAG ~~polypeptide~~, said HIV GAG ~~polypeptide~~ fragment, said ~~HIV GAG polypeptide~~ homologue of HIV GAG or said HIV GAG fragment, said HIV GAGp6 ~~protein~~, said HIV GAGp6 ~~polypeptide~~ fragment, or said ~~HIV GAGp6 polypeptide~~ homologue of HIV GAGp6 or said HIV GAGp6 fragment [[.]];

wherein said first and second proteins are capable of interaction to form a protein complex within said isolated human host cell.